

REMARKS

The Office Action and the cited and applied reference have been carefully reviewed. No claim is allowed. Claims 2-5 and 8-14 presently appear in this application and define patentable subject matter warranting their allowance. Reconsideration and allowance are hereby respectfully solicited.

Submitted herewith is a corrected first page of the IDS filed on October 8, 2010, to correct the typographical error for the Patent Number/Publication Number of the US patent application publication 20080274885 cited in the Ecuadoran Patentability Examination Report submitted with the same IDS of October 8, 2010 (see page 6, third paragraph of the English translation). The examiner is requested to replace the first page of the IDS filed October 8, 2010, with this corrected first page.

Claims 2-5 and 8-14 have been rejected under 35 U.S.C. §103(a) as being unpatentable over, Watanabe et al. (WO 01/02378) in view of Cullen et al. (US 4,748,186) and Assmann et al. (US 6,277,291). This rejection is respectfully traversed.

Applicants submit that a person skilled in the art cannot predict by the effects obtained by the individual

compounds whether a combination of these compounds would result in an additive, synergistic, or antagonistic effect. The second paragraph on page 2 of the present specification states that the action of trifluorobutenes of the Watanabe reference (WO'378) against insects or fungi has not been reported. Therefore, a person skilled in the art would have no reason to combine the trifluorobutenes of WO'378 with the claimed co-components for various purposes.

In the absence of any experimental data showing a synergistic effect, and due to the unpredictability of the field, Watanabe would merely be taken by those of skill in the art as teaching that such an extensive listing of secondary compounds were individually known in the art and may be combined with the trifluorobutene compound of Watanabe, but not as a teaching concerning specific combinations which would yield a synergistic effect.

Watanabe merely teaches at page 8, lines 28-27 that:

In many cases, this results in synergistic effects, i.e., the activity of the mixture exceeds the activity of the individual components. (emphasis added)

The Circuit Court of Patent Appeals in *In re Spormann*, 53 CCPA 1375, 363 F2d 444, 150 USPQ 449, 52 held:

The inherency of an advantage and its obviousness are entirely different questions. That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown. (emphasis added)

In referring to the above decision, the Circuit Court of Patent Appeals further held in *In re Naylor*, 152 USPQ 106, 108 (CCPA, 1966):

[We] cannot ignore the particular product unexpectedly produced by the claimed process, as the Patent Office apparently has done, in determining whether the claimed subject matter as a whole is obvious; moreover, the fact that a rubbery polybutadiene having high 1,2- addition might be inherent in following the combined teachings of the prior art is quite immaterial if, as the record established here, one of ordinary skill in the art would not appreciate or recognize that inherent result.

It is submitted that there is no inherency of synergistic effect in the combination of a trifluorobutene compound and a secondary compound because such inherency is not certain. See *Ex parte Cyba*, 155 USPQ 77, where the Board held that:

In order that a rejection based upon inherency to may be sustained such inherency must be certain. (emphasis added)

See also *In re Oelrich*, 212 USPQ 323, 326 (CCPA 1981), quoting with approval from *Hansgirt v. Kemmer*, 40 USPQ 665, 667 (CCPA 1939):

Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

Watanabe continues with a laundry list of fungicides, bactericides, and insecticides/acaricides/nematicides that spans seven pages. In short, Watanabe does not teach specific synergistic combinations; rather, it is merely an invitation to try any combination of a fungicide, a bactericide, or an insecticide/acaricide/nematicide from a very long list of compounds. This extensive list of compounds in Watanabe would certainly be considered as non-limiting and is merely provided as an example of compounds which may be used *inter alia* in combination. One of ordinary skill in the art would immediately recognize and understand that there is an almost infinite list of compounds which may also be used with a trifluorobutene compound and that there is no particular preference to the list appearing in Watanabe over other compounds.

Based on the disclosure of Watanabe, one of ordinary skill in the art cannot predict by the effects obtained by the

individual compounds whether the combination of a trifluorobutene compound with a secondary compound that is a fungicide, bactericide, acaricide, nematocide or insecticide would result in an additive, synergistic, or even antagonistic effect. As there is no experimental data in Watanabe showing synergistic effects (or any positive statements to the effect) of a combination of a trifluorobutene compound and the secondary compound, Watanabe can only be considered as merely teaching that such compounds were individually known in the art and may be combined (among an almost infinite list of other fungicides, bactericides, insecticides/aracicides/nematicides) with a trifluorobutene compound of Watanabe. Because of the unpredictability in the chemical art and in the relevant field, there is no reasonable expectation of synergy for such a combination of a trifluorobutene compound and a secondary compound.

The most recent Supreme Court pronouncement on obviousness in *KSR International v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007) does not stand for the fact that everything that would be obvious to try would be obvious in the sense of 35 U.S.C. 103. Indeed, *KSR's* analysis of obvious to try states, 82 USPQ2d at 1390:

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp.

This statement of the Supreme Court has recently been analyzed by the Federal Circuit in *Eisai Co. Ltd. v. Dr. Reddy's Laboratories Ltd.*, 87 USPQ2d 1452 (Fed Cir. 2008). Citing this portion of *KSR*, the court stated at 1456-1457:

The Supreme Court's analysis in *KSR* thus relies on several assumptions about the prior art landscape. First, *KSR* assumes a starting reference point or points in the art, prior to the time of invention, from which a skilled artisan might identify a problem and pursue potential solutions. Second, *KSR* presupposes that the record up to the time of invention would give some reasons, available within the knowledge of one of skill in the art, to make particular modifications to achieve the claimed compound. ... Third, the Supreme Court's analysis in *KSR* presumes that the record before the time of invention would supply some reasons for narrowing the prior art universe to a "finite number of identified, predictable solutions," 127 S. Ct. at 1742. In *Ortho-McNeil Pharmaceutical, Inc. v. Mylan Laboratories, Inc.*, 520 F.3d 1358, 1364 (Fed. Cir. 2008), this court further explained that this "easily traversed, small and finite number of alternatives . . . might support an inference of obviousness." To the extent an art is unpredictable, as the chemical arts often are, KSR's focus on these "identified, predictable solutions" may present a difficult hurdle because potential solutions are less

likely to be genuinely predictable. (emphasis added)

Thus, KSR indicates that the "obvious to try" standard only applies when there are a finite number of identified, predictable solutions. Certainly, the chemical arts, as they relate to synergistic effects of combinations of chemical compounds, are unpredictable. The KSR case does not change the previous case law about obvious to try in situations other than those in which there are a finite number of identified predictable solutions. Here, one must establish that there is a reasonable expectation of success, and in the unpredictable chemical arts, there is no reasonable expectation of success based wholly on Watanabe's invitation to try any of an almost infinite combination of compounds.

In *Ex parte Vatter*, BPAI 2008-0141 (December 12, 2007), available at the PTO website at: <http://des.uspto.gov/Foia/ReterivePdf?system=BPAI&flNm=fd20080141-12-12-2007-1>, the examiner assumed that the silicone elastomer of the reference had certain claimed properties. However, the Board found that the "Examiner assumes that the silicone elastomer of [the cited art] has the claimed properties... ." The examiner "has not established with sufficient evidence" this

belief. Similarly, here, the examiner has not established that the combination of a trifluorobutene compound and a secondary compound in Watanabe would reasonably be predicted to have synergistic properties.

In reading Watanabe, one of ordinary skill in the art would understand that the possible options for solving the problem (i.e., obtaining a synergistic mixture/combination) is almost infinite since this same person would have recognized that, in the absence of any guidance, the list of compounds in Watanabe is an open, non-limiting list of compounds and further that compounds not appearing in the list could be equally selected for testing with a trifluorobutene compound of Watanabe.

The examiner further asserts that widening the activity spectrum would not be considered as an additive effect, but appears to suggest a spectrum of activity wider than either agent alone and that this position is further supported by the note that active resistance may be increased by the combination. Applicants assume however that the examiner had intended to state that "*the active resistance may be decreased*" instead of "*increased*".

It should be noted that Watanabe's disclosure at page 8, lines 23-27 states:

The active compounds according to the invention, as such or their formulations, can also be used in a mixture with known fungicides, bactericides, acaricides, nematocides or insecticides, to widen, for example, the activity spectrum or to prevent the development of resistance. In many cases this results in synergistic effects, i.e. the activity of the mixture exceeds the activity of the individual components.
(emphasis added)

Watanabe does not state that these effects are related, namely that widening of spectrum leads to prevention of development of resistance. There can be a situation of widening the spectrum and also preventing resistance and/or providing a synergistic effect; however, widening the spectrum does not necessarily lead to preventing resistance and/or a synergistic effect.

The examiner contends that Example 1 at page 18 of Watanabe discloses a specific working model for testing the agents for soil contaminated with *Meloidogyne icognita* which simply requires mixing the combination of two components and testing the soil sample. The examiner further alleges that testing the various component combination would simply require following similar procedures for the respective pest to be

treated (based on the secondary agent), i.e., mixing the components and contacting a pest model to be tested.

Applicant respectfully disagree. First, the number of co-components listed in Watanabe is more than 500 compounds, for each experiment at least three measurements must be taken in order to evaluate synergy, namely, one for each individual component and one for the combination. Moreover, prior to conducting the specific experiment, a series of experiments need to also be conducted to study the dose-response effect in the model used. For example, if individual components yield 100% kill, there is no rationale to examine the combination for synergy. It should be noted that for each measurement, the number of pests are counted which is not a simple task, especially when conducting such measurements at least 1500 (3x500) times in order to find a synergistic combination, and as explained above, prior to conducting the specific experiment, a series of experiments are conducted to study the dose-response effect in the model used, which also requires such measurements. Therefore, such testing when conducted in a large number of experiments would be overly burdensome and undue to one of skill in the art, even if the technology to do so is known as the examiner asserts.

Appendix

The Appendix includes the following item(s):

- Corrected first page of the IDS filed on October 8,
2010.